



AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, all listings, of claims in the application:

LISTING OF CLAIMS

Claim 1 (currently amended). A system for locating and tracking at least one rover unit from a mobile controller unit comprising::

a mobile controller unit comprising::

a cellular telephone module;

a GPS receiver/processor module;

a specially programmed computer;

a display; and

a power source; and

a rover unit comprising::

a cellular telephone module;

a GPS receiver/processor module;

a specially programmed computer; and

power source;

the mobile controller unit being programmed to have a find feature which includes selection of a command to establish a radio communication link with the rover unit and to obtain the ~~rover's~~ rover unit's position information from the ~~rover's~~ rover unit's GPS receiver/processor module and, using the controller unit's position information from its GPS receiver/processor, to calculate the relative spatial position of the controller and the rover and the controller unit being further equipped to obtain its heading and programmed to use the heading to calculate the bearing to the rover unit relative to the ~~controller's~~ controller unit's heading and position and is programmed to calculate absolute positions of the controller unit and the rover unit on a map whereupon the selected one of a bearing line to the rover unit relative to the ~~controller's~~ controller unit's heading and position or the absolute map positions of the controller unit and the rover unit are available to be displayed on the display upon selection by the user.

Claim 2 (previously presented). The system of Claim 1 in which the controller unit and the rover unit use a common suite of GPS satellites.

Claim 3 (previously presented). The system of Claim 1 in which the controller unit is equipped with a compass to obtain heading of the controller unit and to use the heading so provided to calculate and to allow display of the bearing to the rover unit.

Claim 4 (currently amended). A system for locating on demand a rover unit relative to a mobile controller unit ~~comprising;~~ comprising:

a mobile controller unit ~~comprising a radio positioning receiver,~~ comprising: a GPS receiver/processor module; a radio communications module; and a control system including a specially programmed computer for sending instructions to a rover unit and for processing data received from its own and a ~~rover's~~ rover unit's radio positioning module GPS receiver/processor module and is equipped to obtain its heading;

at least one rover unit ~~comprising a radio positioning module,~~ comprising: a GPS receiver/processor module; a radio communications module; and a control system for receiving instructions from a controller unit and for sending radio positioning data to a controller unit;

whereby the controller unit is able to obtain and process its own position and heading data and position data of the rover unit and to display on a display associated with the controller unit a bearing line to the rover unit relative to the heading and position of the controller unit and the controller unit is equipped with a compass to obtain the heading of the controller unit and is programmed to use the heading so provided to calculate and to allow display of the bearing to the rover unit.

Claim 5 (cancelled).

Claim 6 (cancelled).

Claim 7 (currently amended). A system for locating and tracking at least one rover unit from a mobile controller unit ~~comprising;~~ comprising:

a mobile controller unit ~~comprising;~~ comprising:

- a radio communications module;
- a radio positioning module;
- a specially programmed computer;
- a display; and,
- a power source; and,

a rover unit ~~comprising~~; comprising:

- a radio communications module;
- a radio positioning module;
- a specially programmed computer;
- a power source;

the mobile controller unit being programmed to have a find feature which includes selection of a command to establish a radio communication link with the rover unit and to obtain the ~~rover's~~ rover unit's position information from the ~~rover's~~ rover unit's radio positioning module and the controller unit being further equipped to obtain its heading and programmed to use the heading to calculate the bearing to the rover unit relative to the ~~controller's~~ controller unit's heading and position and programmed to calculate absolute positions of the controller unit and the rover unit on a map whereupon the selected one of a bearing line to the rover unit relative to the ~~controller's~~ controller unit's heading and position or the absolute map positions of the controller unit and the rover unit are available to be displayed on the display upon selection by the user.

Claim 8 (currently amended). A system for locating on demand a rover unit relative to a mobile controller unit ~~comprising~~; comprising:

a mobile controller unit having a radio positioning module and a radio communications module and a control system for sending instructions directly to a rover unit and for processing data received directly from a radio positioning module;

at least one rover unit having a radio positioning module, a radio communications module; a control system for receiving instructions from a controller unit and for sending data directly to a controller unit whereby upon selection by a user the controller unit may display position data of the rover unit and may make available for display a bearing line from the controller unit to the rover unit or absolute map position of the rover unit and the controller unit;

the radio communications module and control system of the mobile controller unit having direct communications with the control system of the same unit such that radio data sent by the rover unit is received directly by the mobile controller unit;

whereby the controller unit receives radio positioning data from a radio positioning system and the rover unit receives radio positioning data from the same radio positioning system and the rover unit sends radio positioning data to the controller unit which compares the data to provide the relative spatial relationship of the rover unit and the controller unit and the controller unit having a means for determining its heading and for calculating the bearing from the controller unit to the rover unit relative to the position and heading of the controller unit.

Claim 9 (cancelled).

Claim 10 (previously presented). The system of Claim 8 in which the radio positioning system is the GPS or any other satellite radio positioning system.

Claim 11 (previously presented). The system of Claim 10 in which the controller unit and the rover unit use a common suite of GPS or other system's satellites to obtain radio positioning data.

Claim 12 (currently amended). A method for locating a rover unit from a mobile controller unit in which the rover unit and the controller unit have cellular telephones capable of intra-communication of data and each have a radio positioning receiver capable of providing its radio position information, and the rover unit has a means for sending radio position information to the controller unit upon demand comprising;

opening a cellular telephone link between the controller unit and the rover unit;

starting a procedure in which the ~~rover's~~ rover unit's radio position information is sent to the controller unit;

comparing the ~~rover's~~ rover unit's radio position information with the ~~controller's~~ controller unit's radio position information to calculate relative spatial position quantities of the controller unit and the rover unit;

determining the heading of the controller unit and calculating the bearing from the, controller unit to the rover unit relative to the position and heading of the controller unit; and displaying a bearing line from the controller unit to the rover unit relative to the position and heading of the controller unit on a display associated with the mobile controller unit.

Claim 13 (previously presented). The method of claim 12 in which the radio positioning receivers are GPS receivers and the radio position information is GPS pseudorange information and the relative spatial position and bearing are determined using the information from a common suite of satellites.

Claim 14 (previously presented). The method of claim 12 in which the radio positioning receivers receive radio position signals from a satellite radio positioning system.

Claim 15 (currently amended). The method of claim 13 further comprising:
using a compass to obtain the heading of the controller unit.

Claim 16 (currently amended). A method for locating a rover unit from a mobile controller unit in which the rover unit and the controller unit have radio communication capability between them such that the controller unit may upon query obtain information from the rover unit and each of the controller unit and the rover unit has a radio positioning module for obtaining radio positioning information such that radio position information of the rover unit will upon query be sent to the mobile controller unit and in which the mobile controller unit can process the radio position information to provide relative spatial relationship of the mobile control unit to the rover unit with periodic updates and displaying the relative spatial relationship on one or more displays associated with the mobile controller unit and the controller unit has a means for obtaining its heading, the method comprising:

the rover unit and the controller unit obtaining radio positioning information;
the rover unit sending its radio positioning information to the controller unit;
the controller unit calculating the relative spatial position of the rover unit and the controller unit; and

the controller unit calculating its heading and the bearing from the controller unit to the rover unit relative to the position and heading of the controller unit; and
displaying a bearing line from the controller unit to the rover unit relative to the position and heading of the controller unit.

Claim 17 (cancelled).

Claim 18 (currently amended). ~~The method of Claim 17~~ A method for locating a rover unit from a mobile controller unit in which the rover unit and the controller unit have radio communication capability between them such that the controller unit may upon query obtain information from the rover unit and each of the controller unit and the rover unit has a radio positioning module for obtaining radio positioning information such that radio position information of the rover unit will upon query be sent to the mobile controller unit and in which the mobile controller unit can process the radio position information to provide relative spatial relationship of the mobile controller unit to the rover unit with periodic updates, and the controller unit has a means to obtain its heading, the method comprising:

determining the bearing from the mobile controller unit to the rover unit relative to the heading and position of the mobile controller unit;

displaying on one or more displays associated with the mobile controller as selected by the user, a bearing line showing the location of the rover unit relative to the position and heading of the mobile controller unit, and a map showing the location of both the mobile controller unit and the rover unit; and

~~further displaying on the one or more displays~~ one or more of the following;
the speed of movement of the rover unit;
the distance of the rover unit to the mobile controller unit;
the altitude of the rover unit relative to the mobile controller unit;
a map display showing the location of the rover unit and trail indicia showing a history of the location of the rover unit over a specified period of time; and
geographical coordinates of the rover unit.

Claim 19 (currently amended). ~~The method of Claim 17 further comprising;~~ A method for locating a rover unit from a mobile controller unit in which the rover unit and the controller unit have radio communication capability between them such that the controller unit may upon query obtain information from the rover unit and each of the controller unit and the rover unit has a radio positioning module for obtaining radio positioning information such that radio position information of the rover unit will upon query be sent to the mobile controller unit and in which the mobile controller unit can process the radio position information to provide relative spatial relationship of the mobile controller unit to the rover unit with periodic updates , and the controller unit has a means to obtain its heading, the method comprising:

determining the bearing from the mobile controller unit to the rover unit relative to the heading and position of the mobile controller unit;

displaying on one or more displays associated with the mobile controller as selected by the user; a bearing line showing the location of the rover unit relative to the position and heading of the mobile controller unit; and a map showing the location of both the mobile controller unit and the rover unit; and

providing a compass to the controller unit to enable displaying of the bearing to the rover unit from the controller unit relative to the position and heading of the controller unit.

Claim 20 (currently amended). A method of finding a rover unit by use of a mobile controller unit comprising;

sending a query to the rover unit by signal from a radio communication module in the mobile controller unit to a radio communication module in the rover unit;

responding to the query; from the rover unit with radio positioning information obtained from a radio positioning module in the rover unit and sent to the mobile controller unit by way of the radio communication modules in each unit;

the rover unit continuing to respond periodically with new radio positioning information;

comparing the radio position information sent to the mobile controller unit with radio positioning information received by the mobile controller unit by its own radio positioning module to determine relative spatial position and absolute map position of the rover unit;

obtaining heading of the mobile controller unit; and

displaying on one or more displays;

an arrow showing the bearing line direction of the location of the rover unit relative to the position and heading of the mobile controller unit;

the speed of movement of the rover unit relative to the controller unit; and

a map display showing the location of the rover unit and of the controller unit.

Claim 21 (original). The method of Claim 20 further comprising;

providing by an optional selection;

on said map display showing the location of the rover unit also showing a series of indicia showing a history of the location of the rover unit.

Claim 22 (previously presented). The method of Claim 21 wherein the radio positioning modules are GPS modules and the rover unit and controller unit use information from a common suite of GPS satellites.

Claim 23 (previously presented). The system of claim 1 in which the controller unit uses GPS information to obtain its heading.

Claim 24 (currently amended). The system of claim 2 in which the ~~radio~~ position information is GPS pseudorange information.

Claim 25 (currently amended). The system of claim 2 in which GPS pseudorange information is used to calculate the relative spatial position of the controller unit and the rover unit and the absolute map position of the controller unit and the heading of the controller unit.

Claim 26 (currently amended). The system of claim 4 in which the controller unit is also equipped to obtain and to calculate its heading from GPS information ~~from a radio positioning source~~.

Claim 27 (currently amended). The system of claim 4 in which the controller unit and the rover unit use a common suite of GPS satellites ~~set of radio positioning sources~~.

Claim 28 (cancelled).

Claim 29 (currently amended). The system of claim ~~28~~ 27 in which the controller unit also uses GPS information to obtain its heading.

Claim 30 (currently amended). The system of claim ~~28~~ 27 in which the radio ~~position~~ information positioning data is GPS pseudorange information.

Claim 31 (currently amended). ~~The system of claim 28~~ A system for locating on demand a rover unit relative to a mobile controller unit comprising:

a mobile controller unit comprising: a GPS receiver/processor; a radio communications module; and a control system including a specially programmed computer for sending instructions to a rover unit and for processing data received from its own and a rover unit's radio positioning module and is equipped to obtain its heading;

at least one rover unit comprising: a GPS receiver/processor, a radio communications module; and a control system for receiving instructions from a controller unit and for sending radio positioning data to a controller unit; and

the controller unit and the rover unit use a common suite of GPS satellites,

whereby the controller unit is able to obtain and process its own position and heading data and position data of the rover unit and to display on a display associated with the controller unit a bearing line to the rover unit relative to the heading and position of the controller unit and

~~in which~~ the controller unit is programmed to calculate the relative spatial position of the controller unit and the rover unit and to calculate absolute positions of the controller unit and the rover unit on a map and the controller unit is enabled to allow selection of display of the bearing line or the absolute map positions of the controller unit and the rover unit.

Claim 32 (cancelled).

Claim 33 (currently amended). The system of claim 7 in which the controller unit and the rover unit use a common set of radio positioning sources.

Claim 34 (previously presented). The system of Claim 7 in which the controller unit is equipped with a compass to obtain heading of the controller unit and is programmed to use the heading so provided to calculate and to allow display of the bearing to the rover unit.

Claim 35 (currently amended). The system of claim 33 in which the radio positioning modules of the controller unit and the rover unit are GPS receiver/processors.

Claim 36 (currently amended). The system of claim 35 in which the controller unit uses GPS information to obtain its heading.

Claim 37 (previously presented). The system of claim 35 in which the radio position information is GPS pseudorange information.

Claim 38 (currently amended). The system of claim 35 in which the controller unit is programmed to calculate the relative spatial position of the controller unit and the rover unit and to calculate absolute positions of the controller unit and the rover unit on a map and the controller unit is enabled to allow selection of display of the bearing line or the absolute map positions of the controller unit and the rover unit.

Claim 39 (currently amended). The system of claim 1 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 40 (currently amended). The system of claim 2 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 41 (currently amended). The system of claim 4 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 42 (currently amended). The system of claim 27 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 43 (currently amended). The system of claim 7 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 44 (currently amended). The system of claim 33 in which the controller unit is also programmed to calculate the distance from the controller unit to the rover unit and that distance is displayed at least along with the display of the bearing line.

Claim 45 (currently amended). The system of claim 8 in which the controller unit also provides the distance from the controller unit to the rover unit for display at least along with the display of the bearing line.

Claim 46 (currently amended). The system of claim 11 in which the controller unit also provides the distance from the controller unit to the rover unit for display at least along with the display of the bearing line.

Claim 47 (currently amended). The method of claim 12 further comprising determining the distance from the controller unit to the rover unit and making display of the distance available either automatically with display of the bearing line, or upon selection by a user.

Claim 48 (cancelled).

Claim 49 (previously presented). The system of claim 8 in which the controller unit is equipped with a compass to obtain its heading.

Claim 50 (previously presented). The method of claim 12 further wherein the heading of the controller unit is obtained from a compass.

Claim 51 (currently amended). The system of claim 1 in which the controller unit is programmed to calculate the speed of movement of the rover unit and to enable its display.

Claim 52 (currently amended). The system of claim 1 in which the controller unit is programmed to calculate the height of the rover unit relative to the controller unit and to enable its display.

Claim 53 (currently amended). The system of claim 1 in which the controller unit is programmed to calculate and equipped to give an audible announcement of the ~~rover's~~ rover unit's bearing direction and distance from the controller unit.

Claim 54 (currently amended). The system of claim 4 in which the controller unit is programmed to calculate the speed of movement of the rover unit and to enable its display.

Claim 55 (currently amended). The system of claim 4 in which the controller unit is programmed to calculate the height of the rover unit relative to the controller unit and to enable its display.

Claim 56 (currently amended). The system of claim 4 in which the controller unit is programmed to calculate and equipped to give an audible announcement of the ~~rover's~~ rover unit's bearing direction and distance from the controller unit.

Claim 57 (currently amended). ~~The system of claim 28~~ A system for locating on demand a rover unit relative to a mobile controller unit comprising:

a mobile controller unit comprising: a GPS receiver/processor; a radio communications module; and a control system including a specially programmed computer for sending instructions to a rover unit and for processing data received from its own and a rover unit's radio positioning module and is equipped to obtain its heading;

at least one rover unit comprising: a GPS receiver/processor; a radio communications module; and a control system for receiving instructions from a controller unit and for sending radio positioning data to a controller unit; and

the controller unit and the rover unit use a common suite of GPS satellites and
~~in which~~ GPS pseudorange information is used to calculate the relative spatial position of the controller unit and the rover unit and the absolute map position of the controller unit and the heading of the controller unit,

whereby the controller unit is able to obtain and process its own position and heading data and position data of the rover unit and to display on a display associated with the controller unit a bearing line to the rover unit relative to the heading and position of the controller unit.

Claim 58 (previously presented). The system of claim 11 in which the controller unit uses GPS information to obtain its heading.

Claim 59 (previously presented). The system of claim 11 in which the radio position information is GPS pseudorange information.

Claim 60 (currently amended). The system of claim 11 in which GPS pseudorange information is used to calculate the relative spatial position of the controller unit and the rover unit and the absolute map position of the controller unit and the heading of the controller unit.

Claim 61 (currently amended). The system of claim 7 in which the controller unit is programmed to calculate the speed of movement of the rover unit and to enable its display.

Claim 62 (currently amended). The system of claim 7 in which in which the controller unit is programmed to calculate the height of the rover unit relative to the controller unit and to enable its display.

Claim 63 (currently amended). The system of claim 7 in which the controller unit is programmed to calculate and equipped to give an audible announcement of the ~~rover's~~ rover unit's bearing direction and distance from the controller unit.

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Claim 64 (currently amended). The system of claim 8 in which the means for calculating calculates the speed of movement of the rover unit and upon selection by the user the controller unit displays the speed of movement of the rover unit.

Claim 65 (currently amended). The system of claim 8 in which the means for calculating calculates the height of the rover unit relative to the controller unit and upon selection by the user the controller unit displays the height.

Claim 66 (currently amended). The system of claim 8 in which the controller unit is equipped to give an audible announcement of the ~~rover's~~ rover unit's bearing direction and distance from the controller unit.

Claim 67 (currently amended). The method of claim 14 in which the rover unit and the controller unit use a common set of radio positioning sources.

Claim 68 (currently amended). The method of claim 67 in which the satellite radio positioning system is the GPS and the rover unit and the controller unit use a common suite of GPS satellites for GPS radio position information.

Claim 69 (previously presented). The method of claim 68 in which the GPS radio position information is GPS pseudorange information.

Claim 70 (currently amended). The method of claim 68 in which the controller unit uses GPS information to obtain its heading.

Claim 71 (currently amended). The method of claim 68 in which the heading of the controller unit is obtained from a compass.

Claim 72 (currently amended). The method of claim 12 further comprising calculating the speed of movement of the rover unit and enabling its display.

Claim 73 (currently amended). The method of claim 12 further comprising calculating the height of the rover unit relative to the controller unit and enabling its display.

Claim 74 (currently amended). The method of claim 12 further comprising giving an audible announcement of the ~~rover's~~ rover unit's bearing direction and distance from the controller.

Claim 75 (cancelled).

Claim 76 (cancelled).

Claim 77 (cancelled).

Claim 78 (cancelled).

Claim 79 (cancelled).

Claim 80(cancelled).

Claim 81 (cancelled).

Claim 82 (cancelled).

Claim 83 (cancelled).

Claim 84 (cancelled).

Claim 85(cancelled).

Claim 86 (cancelled).

Claim 87 (cancelled).

Claim 88 (cancelled).